

REMARKS

Reconsideration is respectfully requested. Claims 1, 2, 4 and 6 are present in the application.

Claims 1, 2 and 4 are rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention.

The Examiner says that the claim 1 of the present application only discloses the property of the sampling function $H(t)$ but does not clearly and particularly point out what is the components of the system.

Applicant respectfully traverses. Applicant cannot agree with the Examiner's position. It is clear from the cited Masaru Kamada document that interpolation operation can be realized by specifying the sampling function and then performing the convolution operation using the sampling function. Therefore, it cannot be said that the claim 1 of the present invention does not point out clearly and particularly the configuration of the system, even if each of components is not given a definition, respectively. A person of skill in the art would be able to realize the data interpolation system of the present invention from the disclosure of the claim 1 of the present application.

Claims 1, 2, 4 and 6 are rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter.

Applicant respectfully traverses.

The Examiner states in essence that just because the claims recite image data, the result is not useful. Applicant disagrees. The result is an image. The input is an image, the output is an image. The result is useful and concrete. Interpolation of data is concrete and useful and tangible.

The Examiner's position is summarized as follows, that the claim 1-2, 4, and 6 cite a system for performing interpolation according to a predetermined mathematical algorithm, that in order for claims to be statutory, claims must either include a practical application or a concrete, useful, and tangible result, and that claims 1-2, 4, and 6 do not so include such application or result.

However, applicant respectfully disagrees with the Examiner. Claim 1 of the present invention discloses that (1) using the sampling function differentiable finite times and having the values of the local support, and, (2) the sampling function can be shown concretely by

$H(t) = -F(t+1/2)/4 + F(t) - F(t-1/2)/4$. Here, the range to be subjected to interpolation operation can be narrowed because of the sampling function of the local support as described in the above (1), and thereby it is developed the advantage that the amount of the operation can be reduced. Further, the fact that

the sampling function is differentiable finite times as mentioned in the above (1) indicates that the waveforms of the sampling function is changing smoothly at the both ends of the sampling function of local support (at the positions of $t=-2$ and $t=+2$ of the sampling function shown in Fig. 3 of the present application). By using the sampling function explained in the above, the advantage that aliasing distortions included in the data obtained as resultant of the interpolation can be removed is developed.

As explained above, useful advantages can be developed by the data interpolation system using the sampling function $H(t)$ of the present claims, and the advantages can't be realized by system using the conventional sampling function.

Claims 1, 2, 4 and 6 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Masaru Kamada et al ("A Smooth Signal Generator Based on Quadratic B-spline Functions") in view of Maltsev et al (U.S. 6,018,597). Applicant respectfully traverses.

The Examiner points out that, in the Masaru Kamada document, Figure 1 is a local support function which represented for equation (3) which k is set at 0. However, applicant respectfully believes that this is incorrect. In the Masaru Kamada document it is the point that k is assumed to have value from $-\infty$ to $+\infty$, and the value of k cannot be changed to a specific value. Further, the sampling function of local support cannot be obtained in the

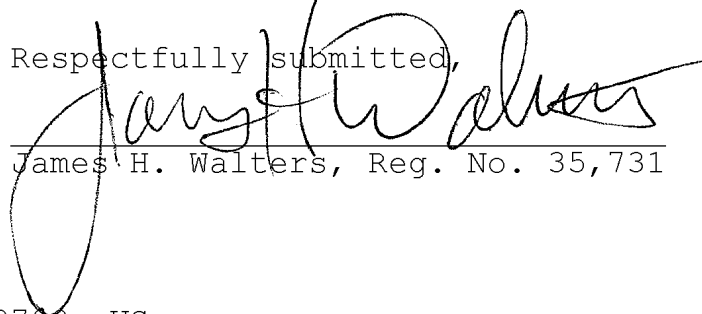
case where k has the value from $-\infty$ to $+\infty$. In fact, if Masaru Kamada et al. could obtain the sampling function of the present claim 1 by transforming the sampling function shown in Masaru Kamada document at the time of the filing of the present application, they had to transform it and obtain the sampling function of the present application. The reason that, if the sampling function could be generated by transforming the Masaru Kamada's sampling function, it should develop the technically very useful advantage of the sampling function that involves no aliasing distortion. However, the Masaru Kamada document does not describe about the above matter, and it does not at all consider about transforming the sampling function.

As explained above, the sampling function of the present claim 1 is essentially different from the sampling function of the Masaru Kamada document, and therefore the invention of the present claim 1 is not obvious, whether Masaru Kamada is considered alone, whether Maltsev et al is considered alone, or when the documents are combined as proposed by the Examiner. Also, the claims depending to the claim 1 and claim 6 are not obvious for corresponding reasons.

In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant's attorney at 503-224-0115 if there are any questions.

It is believed that no further fees are due with this filing or that the required fees are being submitted herewith. However, if additional fees are required to keep the application pending, please charge deposit account 503036. If fee refund is owed, please refund to deposit account 503036.

Respectfully submitted,



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